INDIANA Epidemiology NEWSLETTER

Indiana State Department of Health

Epidemiology Resource Center
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Tuberculosis in Indiana, 2002

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ISDH TB Control Program

Monday, March 24 is World TB Day. It was on this day in 1882 that German microbiologist Robert Koch discovered ***Mycobacterium tuberculosis***, the bacterium that causes tuberculosis (TB). TB continues to be one of the deadliest diseases in the world, with 8 million new cases and 3 million deaths reported worldwide each year. Approximately 95% of TB cases occur in developing countries where there are few resources to insure adequate treatment, and where HIV infection is common. TB is the number one killer of AIDS patients in the world.

Despite a modest increase in new cases in 2002, newly reported TB cases have declined dramatically in Indiana since the 1950s, especially over the last 10 years. During 2002, 128 new cases of TB were reported to the Indiana State Department of Health (ISDH). TB was reported by 33 (36%) of the 92 counties. Seven counties accounted for 67% of all cases. Long-term trends and new cases over the past 10 years are shown in figures 1 and 2 respectively.

Figure 1.

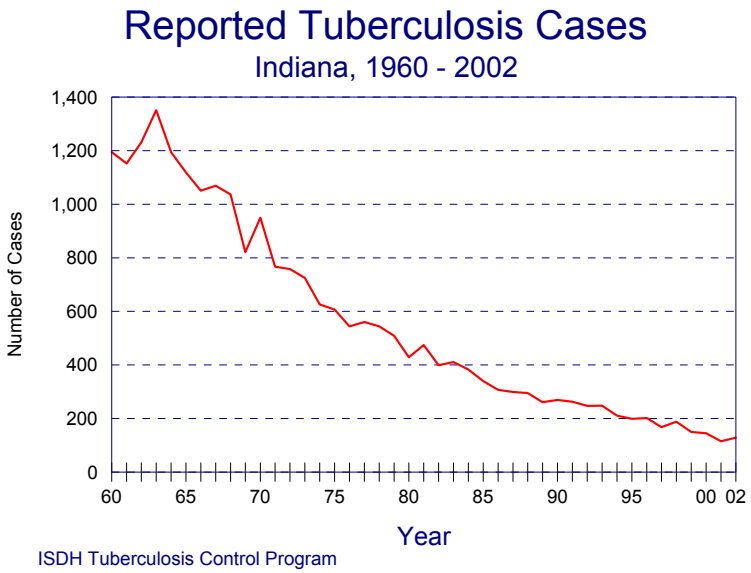

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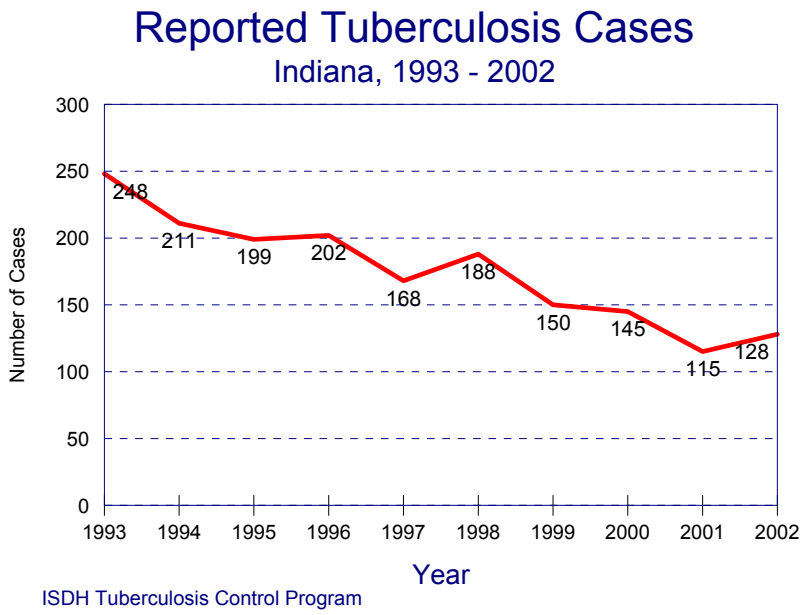
Figure 2.



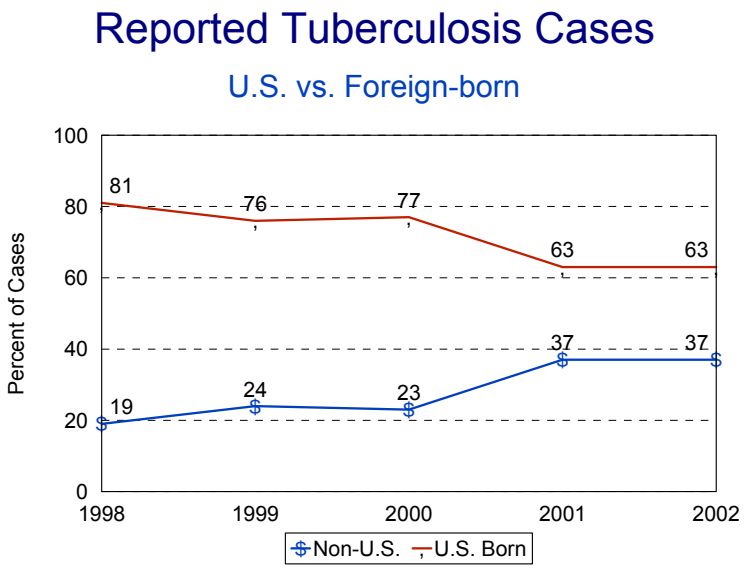
Despite the long-term decline, the numbers of new cases have not declined in every single year. New cases increased by 11% from 2001. The majority of cases of TB disease develop in persons who were infected in the past, and it is not possible to predict who will become ill or when. Other factors also contributed to the increase.

- **Continued transmission among social contacts**. In one county, 3 secondary cases were linked by RFLP (restriction fragment length polymorphism) DNA fingerprinting analysis to a high school student with infectious tuberculosis who had recently moved from another state. A fourth case was linked by RFLP analysis to an outbreak 5 years ago. A second county had 2 cases that were also linked by DNA fingerprinting to 5 other cases reported from 4 different counties in 2000. A third case was linked epidemiologically to this group. All 8 cases involved heavy alcohol use and had either socialized at the same bars or were members of the same family. The 7 cases with matching DNA fingerprints matched the fingerprint of a TB case from central Indiana reported in 1995.

- **An unusually high number of cases among persons ≥ 85 years of age**. Of 40 cases reported in the > 65 age group, 14 (35%) were ≥ 85 years of age.

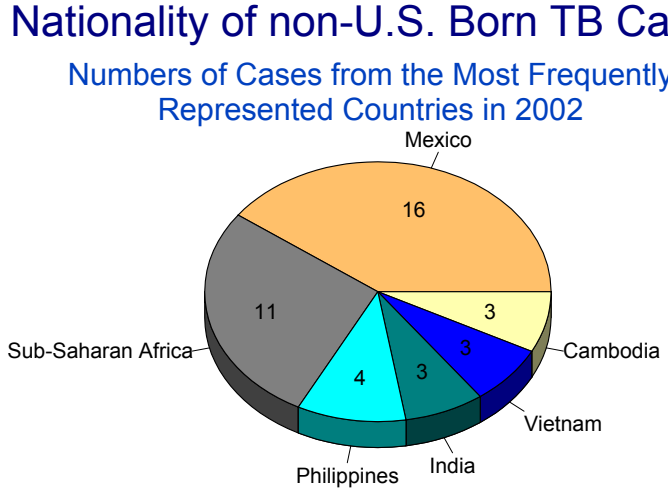
- **A trend of increasing numbers of cases among the foreign-born over the last four years**. Figure 3 shows the percentage of TB cases among the foreign-born versus U.S.-born. Figure 4 shows the countries of origin for the majority of cases.

Figure 3.



ISDH Tuberculosis Control Program

Figure 4.



ISDH Tuberculosis Control Program

Maintaining the decline in new TB cases hinges on the continued implementation of TB control core activities. The most important activity is the prompt identification and treatment of new TB cases, followed by the identification and treatment of infected contacts, and targeted testing and treatment of other persons likely to be infected. The last group includes persons born in countries where TB is common, and persons belonging to socio-economic groups who tend to live and socialize in settings where TB is transmitted. This group includes injection drug users, other substance abusers, and the homeless.

Finally, these activities are incorporated into a client-centered patient management system in which the local health department provides case management and physicians in private practice provide medical care. The ISDH TB Drug Program provides drugs at no cost to the patient. The state mycobacteriology laboratory provides specimen processing, culture identification and drug susceptibility testing at no cost to the patient or referring client laboratories. This integrated approach, combined with the use of directly observed therapy, helps to ensure that all TB patients are being managed appropriately and will complete treatment.

References:

1. Indiana State Department of Health Tuberculosis Information Management System database.
2. Institute of Medicine. *Ending Neglect: The Elimination of Tuberculosis in the United States.* 2000.

Communicable Disease Merges With Epidemiology Resource Center

On March 3, the ISDH Communicable Disease Program officially merged with the Epidemiology Resource Center Surveillance and Investigation Unit. The Surveillance and Investigation Unit now includes Hans Messersmith, director, Pam Pontones, Tom Kerr, Shawn Richards, Julia Butwin, Antoniette Holt, Rose Miller, Nina Smith, Elizabeth Hardister, Wayne Staggs and Jerry Burkman.

In addition, the majority of the Surveillance and Investigation Unit and James Howell, veterinary epidemiologist, have moved to newly renovated office space on the fifth floor of the Selig Building at 2 North Meridian Street. The new mailing address is:

(contact name)
Surveillance Investigation Unit
Epidemiology Resource Center
Indiana State Department of Health
2 North Meridian Street, 5-K
Indianapolis, IN 46204

Wayne Staggs and Jerry Burkman have not moved and can still be reached at the old address. All telephone numbers remain the same. The new fax number for the Surveillance and Investigation Unit is 317-234-2812.

Indiana's Smallpox Preparedness Plan Adds New Objective: Recruiting Volunteer Vaccinators

As implementation of Indiana's Smallpox Preparedness Plan continues, the Indiana State Department of Health is working on a new objective: recruiting health professionals to volunteer for training as smallpox vaccinators.

State Health Commissioner Greg Wilson, M.D. says that Indiana has made good progress in being prepared to provide medical care and to conduct field investigations of smallpox cases in the unlikely event of a release.

According to Dr. Wilson, although the risk of a smallpox outbreak is low, the consequences of an outbreak would be so high that Indiana must be able to perform large-scale smallpox vaccinations in an emergency. If cases of smallpox should occur in Indiana, most of those who have already been vaccinated will be caring for patients in hospitals or will be out in the field investigating the outbreak, and would not available to vaccinate.

To meet this objective, health professionals are asked to volunteer for training as smallpox vaccinators. These volunteers do not need to be vaccinated to receive the training. Health care professionals include nurses, dentists, physician assistants, paramedics, and advanced emergency medical technicians.

Health professionals who wish to volunteer as vaccinators should contact their local health department, preferably by fax. A contact list of Indiana local health department offices can be found on the Indiana State Department of Health Web site at http://www.in.gov/isdh (click on "Public Health Links"), along with a form that can be filled out online or faxed to the local health department. Training sessions will be scheduled as soon as possible. **Those who wish to volunteer are encouraged to contact their local health departments beginning Friday, March 21.**

The vaccinators trained for this new objective will be offered vaccinations prior to fulfilling their role as smallpox vaccinators, but would need to be vaccinated only in the event of a smallpox outbreak. It is anticipated that a mass vaccination process would take approximately 10 days and volunteers would be needed for all or part of that time.

"We can implement this new objective while completing Phase One efforts already underway. These volunteers will be no less prepared because they're not vaccinated in advance," Dr. Wilson said. "In addition to the public health and medical response teams we've currently established, this new objective will provide Indiana with further readiness capacity in the case of an emergency."

As of March 27, 765 volunteers have been vaccinated, including 229 from public health response teams, 524 from health care response teams, and 12 from other areas. There were 34 hospitals represented in Indiana. The "take" rate of vaccination among Indiana vaccinees is 95%. These smallpox vaccination statistics will be updated regularly in upcoming issues of the *Indiana Epidemiology Newsletter*.

Current Smallpox Vaccination Status as of March 27, 2003

Number Vaccinated		Percent Evaluated	
Total # vaccinated	765	% of vaccinees evaluated for take response	62%
Total # vaccinated in public health response teams	229	% of vaccinees with major take response	95%
Total # vaccinated in health care response teams	524		
Total # vaccinated, other	12	Number hospitals represented in Indiana	36

Promotion of Prevention of Perinatal Group B Streptococcal Disease

2002 Revised CDC Guidelines

Thomas Kerr, B.S., R.N.
ISDH Epidemiology Resource Center

Group B Streptococcus (GBS) is a type of bacteria that can be passed from mother to baby during pregnancy or during labor and delivery. Invasive GBS presents in young infants as pneumonia, sepsis and less often as, meningitis, osteomyelitis, and septic arthritis. However, antibiotic treatment during labor of women who test positive for the disease may prevent transmission to the newborn.

Neonatal infections appeared in the 1970s; as many as 50% of the patients died. Advances in neonatal care have decreased the case fatality ratio of early and late onset to 4% in the 1990s. However, GBS remains a leading cause of serious neonatal infection despite great progress in perinatal GBS disease prevention during the 1990s.

1996 Guidelines Replaced

Data collected after the issuance of the 1996 guidelines prompted reevaluation of prevention strategies at a meeting of clinical and public health representatives in November 2001. This report replaces the Centers for Disease Control and Prevention (CDC) 1996 guidelines. Although many of the recommendations in the2002 guidelines are the same as those in 1996, they include some key changes such as:

- All pregnant women should be screened at 35-37 weeks gestation for vaginal and rectal GBS colonization.
- Women with GBS isolated from the urine in any concentration (e.g., 10^3) during their current pregnancy should receive intrapartum chemoprophylaxis because such women usually are heavily colonized with GBS and are at increased risk of delivering an infant with early-onset GBS disease.
- Women who have previously given birth to an infant with invasive GBS disease should receive intrapartum chemoprophylaxis; prenatal culture-based screening is not necessary for these women.
- Colonization during a previous pregnancy is not an indication for intrapartum prophylaxis in subsequent deliveries.
- Screening to detect GBS colonization in each pregnancy will determine the need for prophylaxis in that pregnancy.
- If the result of GBS culture is not known at the onset of labor, intrapartum chemoprophylaxis should be administered to women with any of the following risk factors: gestation <37 weeks, duration of membrane rupture $\geq$18 hours, or a temperature of $\geq$100.4° F ($\geq$38.0°C).
- Women with known negative results from vaginal and rectal GBS screening cultures within 5 weeks of delivery do not require prophylaxis to prevent GBS disease even if any of the intrapartum risk factors develop.
- Women with threatened preterm (<37 weeks' gestation) delivery should be assessed for need for intrapartum prophylaxis to prevent perinatal GBS disease.

- Culture techniques that maximize the likelihood of GBS recovery are required for prenatal screening.
- Collection of specimens for culture may be conducted in the outpatient clinic setting by either the patient, with appropriate instruction, or health-care provider.
- This involves swabbing the lower vagina and rectum (i.e., through the anal sphincter). Because lower vaginal as opposed to cervical cultures are recommended, cultures should not be collected by speculum examination.
- Specimen labels should clearly identify that specimens are for group B streptococcal culture. If susceptibility testing is ordered for penicillin-allergic women, specimen labels should also identify the patient as penicillin allergic.
- If GBS is isolated, the bacteria should be tested for susceptibility to clindamycin and erythromycin.
- At the time of labor or rupture of membranes, intrapartum chemoprophylaxis should be given to all pregnant women identified as GBS carriers.
- Labels on urine specimens from prenatal patients should clearly state the patient's pregnancy status to assist laboratory processing and reporting of results.
- Prenatal culture-based screening at 35--37 weeks' gestation is not necessary for women with GBS bacteriuria.
- Women with symptomatic or asymptomatic GBS urinary tract infection detected during pregnancy should be treated according to current standards of care for urinary tract infection during pregnancy.

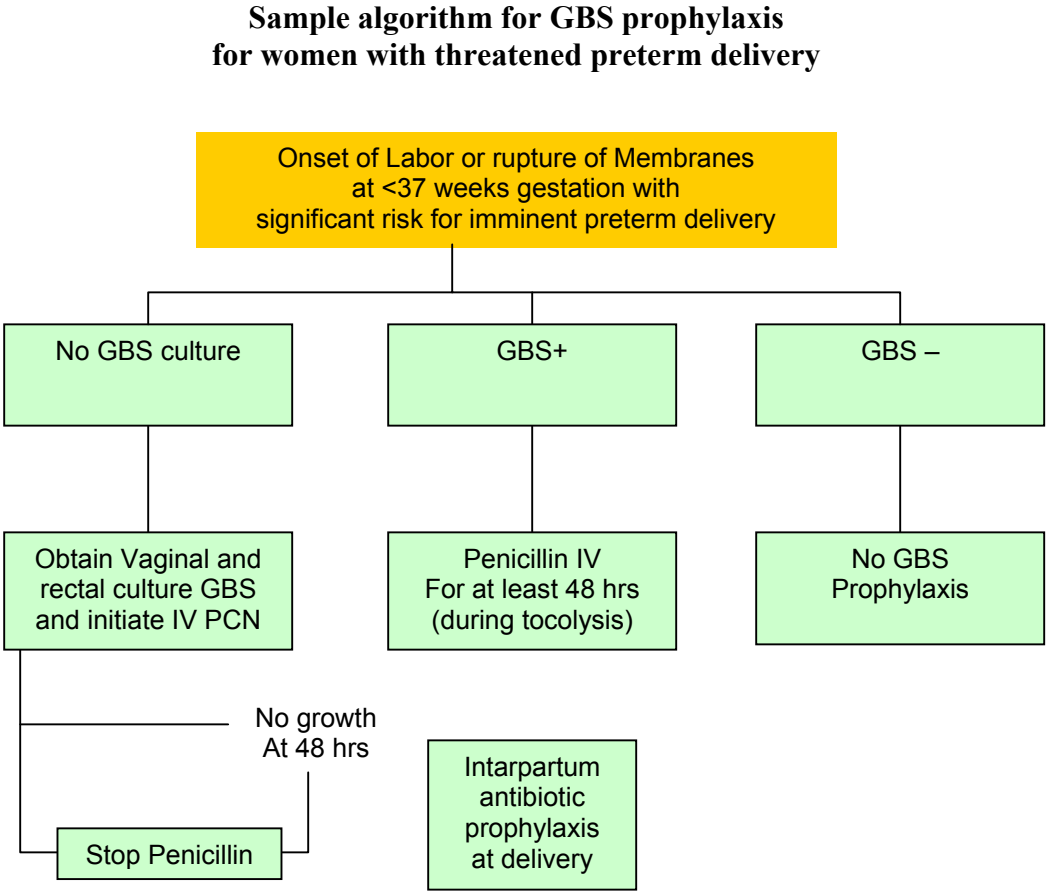
Other changes include:

- Updated prophylaxis regimens for women with penicillin allergy
- Detailed instruction on prenatal specimen collection and expanded methods of GBS culture processing, including instructions on antimicrobial susceptibility testing
- Recommendation against routine intrapartum antibiotic prophylaxis for GBS-colonized women undergoing planned cesarean deliveries that have not begun labor or had rupture of membranes.

Other management approaches, developed by individual physicians or institutions, may be appropriate.

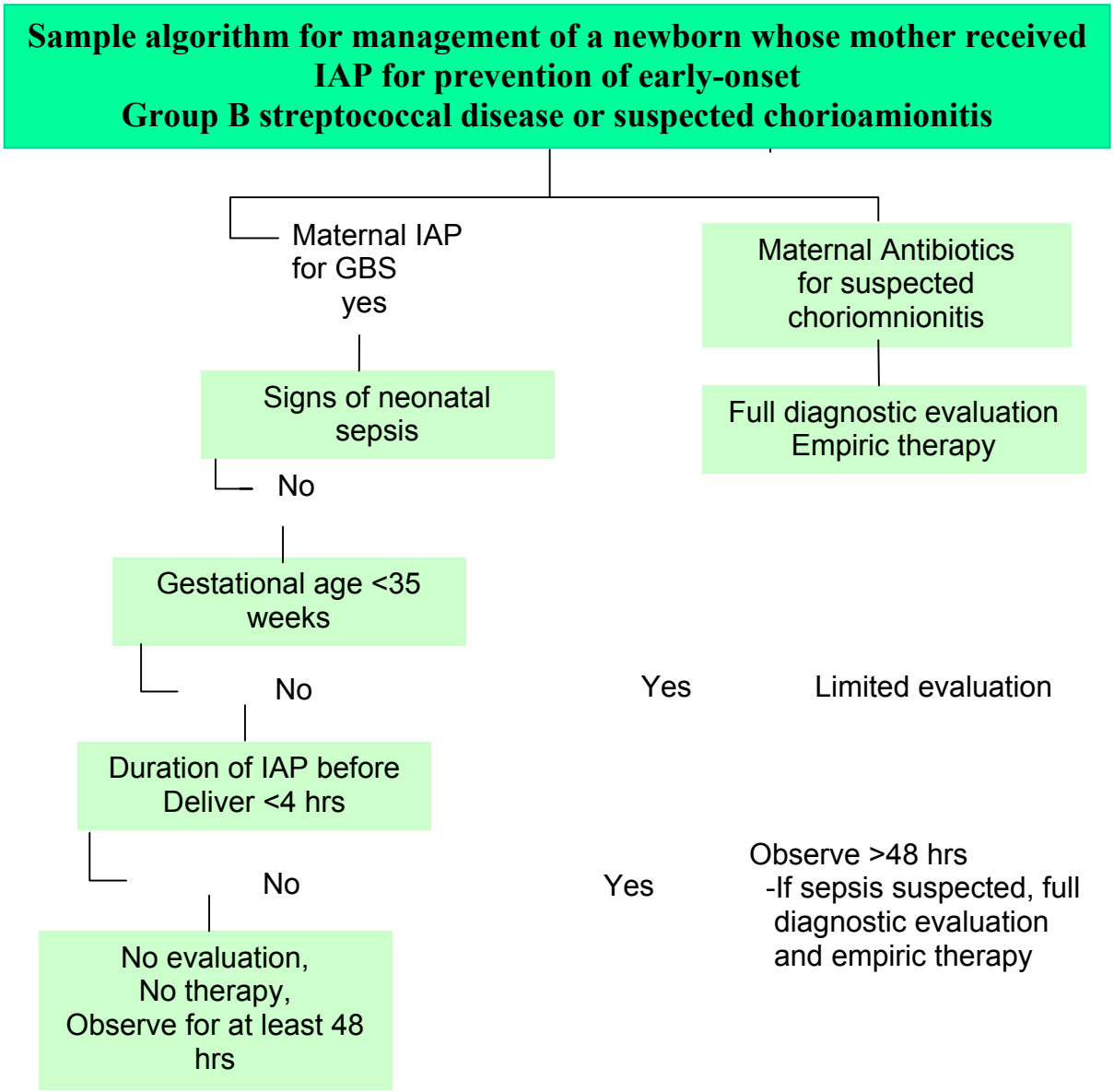
A suggested algorithm for management of patients with threatened preterm delivery as shown in Figure 1.

Figure 1.



An updated algorithm for management of newborns exposed to intrapartum antibiotic prophylaxis (IAP) as seen in Figure 2.

Figure 2.



Universal screening for GBS colonization is anticipated to result in further reductions in the burden of GBS disease. However, the need to monitor for potential adverse consequences of intrapartum antibiotic use, such as emergence of bacterial antimicrobial resistance or increased incidence or severity of non-GBS neonatal pathogens. Intrapartum antibiotics are still viewed as an interim strategy until GBS vaccines achieve licensure. Before the full implementation of this strategy can be expected in all healthcare settings, all members of the healthcare team will need to improve protocols for isolation and reporting of GBS culture results.

Even with the ideal implementation, early onset cases of GBS disease will continue to occur. Tools to help promote prevention and educate parents of infants with early onset GBS disease are available at

http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5111a1.htm
http://www.acog.org
http://www.aap.org/policy/groupb.html

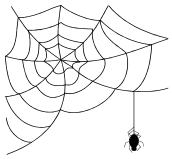
Field Epidemiologist Position Available

The ISDH is seeking a field epidemiologist (Epidemiologist E7) to serve in the Elkhart County area. This employee would be based in Elkhart County, but will assist local health departments in LaPorte, St. Joseph, Elkhart, Starke, Marshall, Kosciusko, Pulaski and Fulton counties. Job duties include, but are not limited to:

- Assisting local public health professionals in analyzing data gathered during epidemiologic outbreak investigations within the district;
- Cooperating with and securing assistance from public health and medical professionals and others in epidemiologic outbreak investigations within the district;
- Assisting local health departments within the district to prepare and respond to public health events;
- Coordinating efforts with local public health professionals to identify, analyze and interpret local clusters of disease through routine surveillance methods; and
- Interpreting data developed by other programs and agencies, such as ISDH, regarding the possibility of any increase in the risk of disease within the district.

Minimum qualifications include four years' full-time professional experience in epidemiology or public health and a bachelor's of science degree in a biological science; chemistry; an environmental or health science; mathematics; nursing; pharmacology; public health; a social science; statistics; toxicology or a closely related area from an accredited college required. Substitutions: accredited graduate training in any of the following areas may substitute for the required experience on a year-for-year basis: a biological science; mathematics; a social science or a closely related area. A master's degree in epidemiology, public health, an environmental or health science, nursing, toxicology, or statistics from an accredited college may sub for all of the required experience.

Those interested should contact Betty Edwards-Clark, ISDH Human Resources, at 317-233-7602.



Wonderful Wide Web Sites

ISDH Data Reports Available

The ISDH Epidemiology Resource Center has the following data reports and the Indiana Epidemiology Newsletter available on the ISDH Web Page:

http://www.in.gov/isdh/dataandstats/epidem/epinews_index.htm

Indiana Cancer Incidence Report (1990, 95,96, 97)

Indiana Cancer Mortality Report (1990-94, 1992-96)

Indiana Health Behavior Risk Factors (1995-96, 97, 98, 99, 2000, 2001)

Indiana Hospital Consumer Guide (1996)

Public, Hospital Discharge Data (1999, 2000, 2001)

Indiana Maternal & Child Health Outcomes & Performance Measures (1988-97, 1989-98, 1990-99, 1991-2000)

Indiana Marriage Report (1995, 97, 98, 99, 2000)

Indiana Mortality Report (1999, 2000)

Indiana Natality Report (1995, 96, 97, 98, 99, 2000, Provisional 2001)

Indiana Induced Termination of Pregnancy Report (1998, 99, 2000)

Indiana Infectious Diseases Report (2000)

Former Indiana Report of Diseases of Public Health Interest (1996, 97, 98, 99)

HIV Disease Summary

Information as of February 28, 2003 (based on 2000 population of 6,080,485)

HIV - without AIDS to date:

434	New HIV cases from April 2001 thru March 2002	12-month incidence	7.14 cases/100,000
3,683	Total HIV-positive, alive and without AIDS on March 31, 2002	Point prevalence	60.58 cases/100,000

AIDS cases to date:

490	New AIDS cases April 2001 thru March 2002	12-month incidence	8.06 cases/100,000
3,289	Total AIDS cases, alive on March 31, 2002	Point prevalence	54.10 cases/100,000
6,972	Total AIDS cases, cumulative (alive and dead)		

REPORTED CASES of selected notifiable diseases

Disease	Cases Reported in February *MMWR* Week 6-10		Cumulative Cases Reported January - February *MMWR* Weeks 1-10	
	2002	2003	2002	2003
Campylobacteriosis	14	9	23	21
Chlamydia	1,775	1,469	3,194	3,273
E. coli O157:H7	3	3	5	3
Hepatitis A	6	2	7	3
Hepatitis B	4	0	4	0
Invasive Drug Resistant *S. pneumoniae* (DRSP)	17	10	24	10
Gonorrhea	754	592	1,419	1,279
Legionellosis	3	1	3	1
Lyme Disease	1	1	2	2
Measles	0	0	0	0
Meningococcal, invasive	3	0	7	4
Pertussis	8	4	8	4
Rocky Mountain Spotted Fever	0	0	0	0
Salmonellosis	23	16	39	28
Shigellosis	5	4	9	9
Syphilis (Primary and Secondary)	3	2	11	5
Tuberculosis	5	12	14	22
Animal Rabies	0	2 (bats)	1 (bat)	2 (bats)

For information on reporting of communicable diseases in Indiana, call the *ISDH Communicable Disease Division* at (317) 233-7665.

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The *Indiana Epidemiology Newsletter* is published by the Indiana State Department of Health to provide epidemiologic information to Indiana health professionals and to the public health community.